

VBB SERIES HIGH PRESSURE BALL VALVES

Handle with PVC Color Coat

- allows easy and quick operation with low torque and ¼ turn to open and close
- can be operated by pneumatic actuator

Panel Mounting and Locking Devices

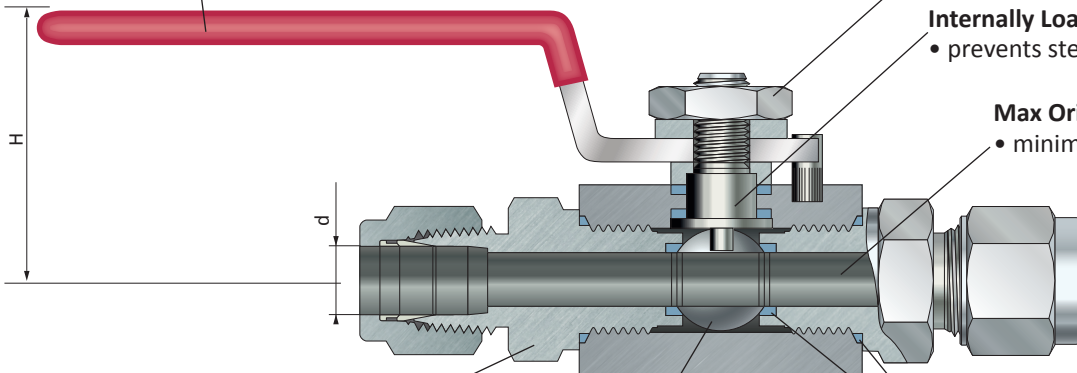
- are available as options

Internally Loaded Stem with Shoulder

- prevents stem blow-out

Max Orifice

- minimizes the pressure drop



Robust Body

- is best suited for high pressure application
- is available in diverse patterns including :
2-way straight, 2-way angle, bottom entry
3-way and side entry 3-way

Floating Ball Design

- ensures leak proof shut-off at high pressure

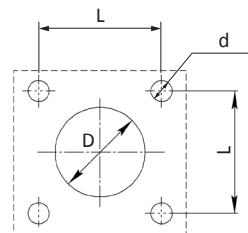
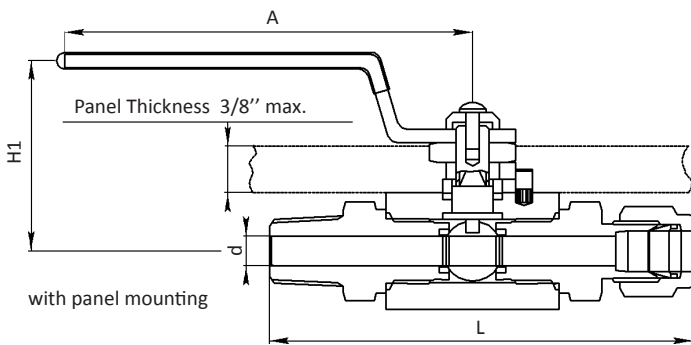
Seats and Packings

- are replaceable

I. FEATURES

- **Pressure rating** up to 690bar (10,000 psig) @ 21°C (70°F)
- **Temperature rating** from -30°C to 130°C (-22°F to 265°F) with PVDF seat or from -64°C to 260°C (-65°F to 500°F) with PEEK seat
- **Small and compact design**
- **Materials available** in 316 stainless steel and alloy 400
- **100% factory tested.**

2-WAY

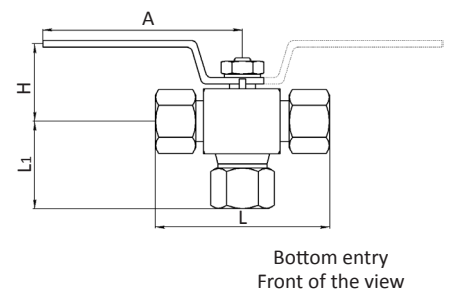
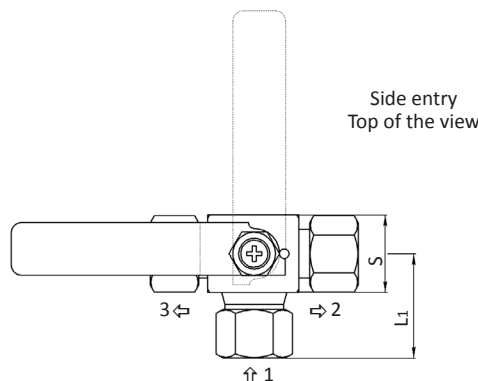
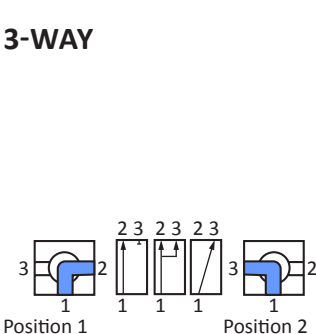


Panel mounting

Valve Type	Orifice	D	d	LxL
VBB1	10.0	30.0	5	26x26
VBB2	12.7	38.0	5	34x34
VBB3	19.0	38.0	5	44x44

Screw Holes in valves are M4x6 mm Depth

3-WAY



II. TABLE OF DIMENSIONS

(Unit: mm)

2-Way	3-Way	Orifice, mm	Cv	End Connections	d min, mm	Dimensions, mm					
				Inlet & Outlet		L	L ₁	H	A	H1	S
VBB1 - A - 4T	VBB1-3* - A - 4T	10.0	1.2	1/4" A-Flok	4.8	91.6	53.3	38.0	126.5	46.7	32.0
VBB1 - A - 6T	VBB1-3* - A - 6T	10.0	3.7	3/8" A-Flok	7.1	94.6	54.8	38.0	126.5	46.7	32.0
VBB1 - A - 8T	VBB1-3* - A - 8T	10.0	7.5	1/2" A-Flok	10.0	99.6	54.0	38.0	126.5	46.7	32.0
VBB1 - A - 6M	VBB1-3* - A - 6M	10.0	7.5	6mm A-Flok	10.0	91.6	53.3	38.0	126.5	46.7	32.0
VBB1 - A - 8M	VBB1-3* - A - 8M	10.0	7.5	8mm A-Flok	10.0	91.6	53.3	38.0	126.5	46.7	32.0
VBB1 - A - 10M	VBB1-3* - A - 10M	10.0	7.5	10mm A-Flok	10.0	94.6	54.8	38.0	126.5	46.7	32.0
VBB1 - A - 12M	VBB1-3* - A - 12M	10.0	7.5	12mm A-Flok	10.0	99.6	54.0	38.0	126.5	46.7	32.0
VBB1 - A - 14M	VBB1-3* - A - 14M	10.0	7.5	14mm A-Flok	10.0			38.0	126.5	46.7	32.0
VBB1 - F - 4N	VBB1-3* - F - 4N	10.0	7.5	1/4" NPT female	10.0	64.0	36.5	38.0	126.5	46.7	32.0
VBB1 - F - 6N	VBB1-3* - F - 6N	10.0	7.5	3/8" NPT female	10.0	71.0	40.0	38.0	126.5	46.7	32.0
VBB1 - F - 8N	VBB1-3* - F - 8N	10.0	7.5	1/2" NPT female	10.0	79.0	44.0	38.0	126.5	46.7	32.0
VBB1 - M - 4N	VBB1-3* - M - 4N	10.0	3.7	1/4" NPT male	7.1	85.4		38.0	126.5	46.7	32.0
VBB1 - M - 6N	VBB1-3* - M - 6N	10.0	7.2	3/8" NPT male	9.7	85.4		38.0	126.5	46.7	32.0
VBB1 - M - 8N	VBB1-3* - M - 8N	10.0	7.5	1/2" NPT male	10.0	95.2		38.0	126.5	46.7	32.0
VBB2 - F - 8N	VBB2-3* - F - 8N	12.7	10.0	1/2" NPT female	12.7	90.0	65.3	50.8	162.0	60.6	40.0
VBB2 - F - 12N	VBB2-3* - F - 12N	12.7	10.0	3/4" NPT female	12.7	90.0	65.3	50.8	162.0	60.6	40.0
VBB2 - M - 12N	VBB2-3* - M - 12N	12.7	10.0	3/4" NPT male	12.7	105.2		50.8	162.0	60.6	40.0
VBB2 - A - 14M	VBB2-3* - A - 14M	12.7	10.0	14mm A-Flok	12.7			50.8	162.0	60.6	40.0
VBB2 - A - 16M	VBB2-3* - A - 16M	12.7	10.0	16mm A-Flok	12.7			50.8	162.0	60.6	40.0
VBB2 - A - 18M	VBB2-3* - A - 18M	12.7	10.0	18mm A-Flok	12.7			50.8	162.0	60.6	40.0
VBB2 - A - 10T	VBB2-3* - A - 10T	12.7	10.0	5/8" A-Flok	12.7	110.6	49.5	50.8	162.0	60.6	40.0
VBB2 - A - 12T	VBB2-3* - A - 12T	12.7	10.0	3/4" A-Flok	12.7	110.6	55.0	50.8	162.0	60.6	40.0
VBB3 - F - 12N	VBB3-3* - F - 12N	19.0	30.0	3/4" NPT female	20.0	90.0	69.8	55.6	162.0	65.6	50.0
VBB3 - F - 16N	VBB3-3* - F - 16N	19.0	30.0	1" NPT female	20.0	98.2	69.8	55.6	162.0	65.6	50.0
VBB3 - A - 18M	VBB3-3* - A - 18M	19.0		18mm A-Flok	15.8	116.6	56.5	55.6	162.0	65.6	50.0
VBB3 - A - 25M	VBB3-3* - A - 25M	19.0		25mm A-Flok	15.8	110.6	49.5	55.6	162.0	65.6	50.0
VBB3 - A - 12T	VBB3-3* - A - 12T	19.0	19.0	3/4" A-Flok	15.8	116.6	56.5	55.6	162.0	65.6	50.0
VBB3 - A - 16T	VBB3-3* - A - 16T	19.0	30.0	1" A-Flok	20.0	129.8	60.6	55.6	162.0	65.6	50.0
VBB3 - M - 12N	VBB3-3* - M - 12N	19.0	19.0	3/4" NPT male	15.8	115.2		55.6	162.0	65.6	50.0
VBB3 - M - 16N	VBB3-3* - M - 16N	19.0	30.0	1" NPT male	20.0	124.8		55.6	162.0	65.6	50.0

III. TECHNICAL DATA

Material of Construction

Описание	Grade/ASTM Specification	
	Valve Body Material	
	SS316	Alloy 400
Handle	Stainless Steel with PVC Coating	
Lock Nut	Stainless Steel with Washer	
Pin	Stainless Steel	
Stem	SS316 / A276	
Stem Packing*	PTFE	
Ball*	SS316 / A276	
Seats *	PVDF (standard)	
End Connector	SS316 / A276	Alloy 400 / B164
End Seals*	PTFE / Viton	
Body	SS316 / A276	Alloy 400 / B164

Note: "*" marked are wetted ports. Lubricant Is silicone based.

Pressure and Temperature Rating

VBB1 Types

Materials			Pressure Rating @ -54°C to 21°C (-65°F to 70°F)	Temperature Rating
Seat	Stem Packing	End Seal		
PVDF (standard)	PTFE		414 bar	-30°C to 130°C (-22°F to 265°F)
PCTFE	PTFE		414 bar	-30°C to 180°C (-22°F to 355°F)
PEEK	PTFE		690 bar	-54°C to 260°C (-65°F to 500°F)

VBB2, VBB3 Types

Materials			Pressure Rating @ -54°C to 21°C (-65°F to 70°F)	Temperature Rating
Seat	Stem Packing	End Seal		
PVDF (standard)	PTFE	Viton	340 bar (5.000 psig)	-23°C to 191°C (-10°F to 375°F)
PCTFE	PTFE	Viton	340 bar (5.000 psig)	
PEEK	PTFE	Viton	410 bar (6.000 psig)	

Note

- The above pressure rating is for 2-way straight pattern valves. 80% of the above rating shall be applicable to 2 - way angle pattern valves and 3-way valves.
- The rated pressure shown above is the maximum allowable pressure to the seat, if the system requires higher pressure to test, the valve must be in open position before and during test so as not to damage the seat.
- When valves with Hy-Lok Fitting end connections are connected to tubing, the working pressure of tubing must be considered in the calculation of total system working pressure.

Handle

- Handle is made of stainless steel with PVC coat in yellow.
- Other colors are available upon request.

Sour Gas Service

- is provided to meet NACE Standard MR-01-75.

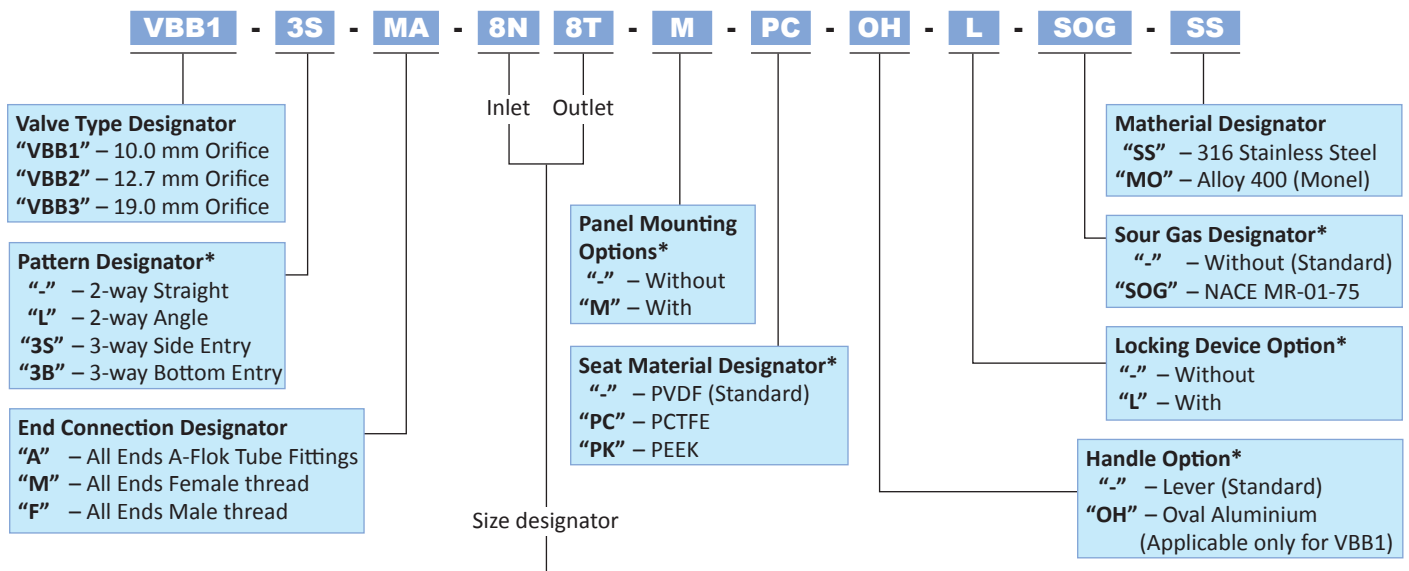
Testing

- Each valve is tested with nitrogen @ 69 bar (1.000 psig) to max leak rate of 0.1 SCCM.
- Hydrostatic shell test is performed at 1.5 times the working pressure.
- Optional tests are available upon request.

Torque for Turning Handle (N·m)

Valve Type	Orifice	Working Pressure, bar										
		0	69	148	207	278	345	414	483	550	620	690
VBB1	10.0	1.4	1.4	1.4	1.6	2.1	2.3	2.7	2.9	3.3	3.7	4.0
VBB2	12.7	2.9	2.9	3.8	4.3	5.0	5.2	5.6	-	-	-	-
VBB3	19.0	3.1	3.1	4.2	6.5	8.0	8.6	9.6	-	-	-	-

IV. ORDERING INFORMATION



NPT (BSP)						A-Flok Tube Fitting										
Thread (in.)	¼	⅜	½	¾	1	Metric Tube	O.D. (mm)	6	8	10	12	14	16	18	20	25
NPT	4N	6N	8N	12N	16N		Designator	6M	8M	10M	12M	14M	16M	18M	20M	25M
RT (BSPT)	4R	6R	8R	12R	16R	Fraction Tube	O.D. (in.)	¼	⅜	½	⅝	¾	1			
G (BSP)	4G	6G	8G	12G	16G		Designator	4T	6T	8T	10T	12T	16T			

Note *: No designator is required for standard items, e.g. VBB1-F-6N-SS.

SAFETY in VALVE SELECTION

Proper installation, materials compatibility, operation and maintenance of these valves are the responsibility of the user. The total system design must be taken into consideration to ensure optimal performance and safety.